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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/675,040	09/30/2003	John K. Walton	EMC2-131PUS	5449
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RICHARD M. SHARKANSKY			EXAMINER	
PO BOX 557			WINDER, PATRICE L	
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			ART UNIT	PAPER NUMBER
			2145	
			MAIL DATE	DELIVERY MODE
			01/10/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/675,040

Applicant(s)

WALTON ET AL.

Examiner

Patrice Winder

Art Unit

2145

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 October 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s) -

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>10-22-207</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 9 recites the limitation "the redundant network" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 2-5 and 7-9 are rejected under 35 U.S.C. 102(e) as being anticipated by DeKoning et al., USPN 6,754,853 B1 (hereafter referred to as DeKoning).

5. Regarding claim 2, DeKoning taught a system interface (column 4, lines 12-17) comprising:

plurality of directors, one portion of such directors being adapted for coupling to a host computer/server and another portion of the directors being adapted for coupling to a bank of disk drives, the plurality of directors being interconnected through a network (column 4, lines 43-45);

a common resource section for providing a resource shared among the plurality of directors (column 3, lines 15-16; column 4, lines 27-35; column 5, lines 2-5); and

wherein the common shared resource section includes a shared computer code used by the plurality of directors (column 3, lines 15-19; column 4, lines 33-35).

6. Regarding dependent claim 3, DeKoning taught the code includes computer code for booting up each one of the plurality directors (column 4, lines 33-35; column 6, lines 31-35).

7. Regarding dependent claim 4, DeKoning taught the common shared code storage section is interconnected to the directors through the network (column 4, lines 35-39).

8. Regarding dependent claim 5, plurality of directors, one portion of such directors being adapted for coupling to a host computer/server and another portion of the directors being adapted for coupling to a bank of disk drives, the plurality of directors being interconnected through a network (column 4, lines 43-45);

a common resource section for providing a resource shared among the plurality of directors (column 3, lines 15-16; column 4, lines 27-35; column 5, lines 2-5);

wherein the common shared resource section includes a shared computer code used by the plurality of directors (column 3, lines 15-19; column 4, lines 33-35); and

including second, redundant common shared resource section (Figure 1 taught RAM 129 and firmware 128 associated with both controllers 124 and 126).

9. Regarding dependent claim 7, DeKoning taught such system interface includes a second, redundant network coupled to the second shared resource section for use in

Art Unit: 2145

interconnecting the directors in the event the first mentioned one of the shared resource sections fails (Figure 1 taught multiple network fabrics 132, column 4, lines 45-48).

10. Regarding dependent claim 8, plurality of directors, one portion of such directors being adapted for coupling to a host computer/server and another portion of the directors being adapted for coupling to a bank of disk drives, the plurality of directors being interconnected through a network (column 4, lines 43-45);

a common resource section for providing a resource shared among the plurality of directors (column 3, lines 15-16; column 4, lines 27-35; column 5, lines 2-5);

wherein the common shared resource section includes a shared computer code used by the plurality of directors (column 3, lines 15-19; column 4, lines 33-35); and

wherein the network is a packet switching network (column 1, lines 33-35; column 4, lines 22-25).

11. Regarding dependent claim 9, DeKoning taught the redundant network is a packet switching network (column 1, lines 33-35; column 4, lines 45-48).

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

14. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over DeKoning in view of Bramhall et al., USPN 6,675,258 B1 (hereafter referred to as Bramhall).

Regarding dependent claim 6, DeKoning does not specifically teach a second, redundant common shared resource section. However, Bramhall taught second, redundant common shared resource section stores computer code used by the plurality of directors in the event the first mentioned one of the common shared code storage section fails (column 4, lines 23-29, 61-67). It would have been obvious to one of ordinary skill in the art at the time the invention was made that incorporating Bramhall's second, redundant common shared resource section in DeKoning's system for determining faults in a data storage system would have improved reliability. The

motivation would have been because providing redundant firmware would ensure operability despite controller failures.

15. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over DeKoning in view of Guha et al., USPN 7,181,57 B1 (hereafter referred to as Guha).

16. Regarding claim 10, DeKoning taught a system interface (column 4, lines 12-17) comprising:

plurality of directors, one portion of such directors being adapted for coupling to a host computer/server and another portion of the directors being adapted for coupling to a bank of disk drives, the plurality of directors being interconnected through a network (column 4, lines 43-45);

a common resource section for providing a resource shared among the plurality of directors (column 3, lines 15-16; column 4, lines 27-35; column 5, lines 2-5); and

wherein the common shared resource section includes a shared computer code used by the plurality of directors (column 3, lines 15-19; column 4, lines 33-35).

DeKoning does not specifically teach including a cache memory coupled to the directors and the shared resource though the network. However, Guha taught teach including a cache memory coupled to the directors and the shared resource though the network (column 11, lines 43, 59). It would have been obvious to one of ordinary skill in the art the time the invention was made that incorporating Guha's cache memory in DeKoning's system for determining faults in a data storage system would have improved storage management. The motivation would have been to better manage fail-over during storage device faults.

Response to Arguments

17. Applicant's arguments filed October 22, 2007 have been fully considered but they are not persuasive.

18. Applicant argues – "With DeKoning et al., one director does not go to the same shared place (i.e., resource) that another one of the directors goes to for the same code. "

a. Applicant's claim language recites "using shared code" which is not the same as requiring that the directors access the same code. In a distributed computing environment, one way to use shared code is to have multiple nodes processing the same code, i.e. firmware. In Dekoning's system each distributed node processes the same computer code, i.e. uses shared code.

Conclusion

19. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

20. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

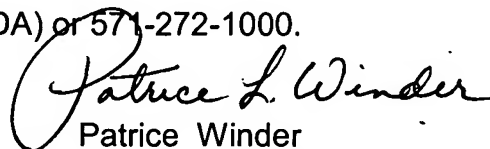
Art Unit: 2145

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrice Winder whose telephone number is 571-272-3935. The examiner can normally be reached on Monday-Friday, 10:30 am-7:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Cardone can be reached on 571-272-3933. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Patrice Winder
Primary Examiner
Art Unit 2145

January 6, 2008